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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,030	06/23/2003	Stephen FLORENCE	45283.85	1029

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EXAMINER

KALAFUT, STEPHEN J

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 10/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/604,030

Applicant(s)

FLORENCE ET AL.

Examiner

Stephen J. Kalafut

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☒ Claim(s) 8-14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date (2 dates).
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

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Claims 2-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are unclear as to whether they require the fuel cell to be present. The term "fuel cell stack enclosure" implies that the enclosure is claimed per se, without the fuel cell, but the claim 2 recites that the "inner chamber is adjacent the fuel cell stack", which is a locational relationship between the enclosure and a fuel cell.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3 and 5-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Vu *et al.* (US 6,794,074).

Vu *et al.* disclose an enclosure (22) that contains two metal-air cells (40), which are a type of fuel cell due to their consumption of air. Vu *et al.* thus disclose a fuel cell stack enclosure. The enclosure includes an outer chamber (between outer wall 22 and housing 36), an intermediate chamber (41) and an inner chamber (60) that contains the metal-air cells. Air flows through an opening (58) into the outer chamber, through a second opening (47) into intermediate chamber, then through a third opening (54) into the inner chamber, and finally into the stack of metal-air cells. Although most of the walls of the enclosure are curved (figure 5), the top and

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bottom walls are flat (figure 4), and would thus comprise “at least two substantially planar sections”. Because no solid material has infinite thermal conductivity, the walls separating the chambers would constitute insulating layers. The enclosure also comprises a fan (50) that sends the reactant oxygen to the cells, whose speed is variably controlled (column 9, lines 13-18).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vu et al.

This claim differs from Vu *et al.* by reciting that the enclosure has at least three flat sections. However, because cells may exhibit a variety of shapes such as round and prismatic, it would be obvious to shape any housing enclosing such cells to be compatible therewith. An enclosure for prismatic cells would have at least three planar sections. For this reason, this claim is considered obvious over Vu *et al.*

Claims 8-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art, cited either herein or by applicants, does not disclose a fuel cell housing with at least three concentric shells; two chambers defined thereby; and intake, crossover and outlet ports through which reactant passes through the chambers into the interior.

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Evans et al. (US 6,843,311) disclose a stack of plate-type heat exchangers. Redenbach (US 3,096,255) discloses a spiral heat exchanger. Champion (US 2005/0014054) discloses a fuel cell with a helical reactant flow path.

Claim 8 is objected to because of the following informalities: A space needs to be placed between each letter in parentheses, such as “(a)”, and the immediately following text. Appropriate correction is required.

The disclosure is objected to because of the following informalities: The space between each letter in parentheses and the text following each is also needed in sections 0012 through 0016 of the specification. Appropriate correction is required.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Kalafut whose telephone number is 571-272-1286. The examiner can normally be reached on Mon-Fri 8:00 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sjk



STEPHEN KALAFUT
PRIMARY EXAMINER
GROUP